



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/586,325	06/02/2000	Ulrich Bortfeld	02con360p	6473

25700 7590 06/16/2004

FARJAMI & FARJAMI LLP
26522 LA ALAMEDA AVENUE, SUITE 360
MISSION VIEJO, CA 92691

EXAMINER

CRAIG, DWIN M

ART UNIT	PAPER NUMBER
----------	--------------

2123

DATE MAILED: 06/16/2004

16

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/586,325

Applicant(s)

BORTFELD ET AL.

Examiner

Dwin M Craig

Art Unit

2123

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 3-29-2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-35 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-8, 10-14, 17-20, 23-31, 33 and 34 is/are rejected.
- 7) ☒ Claim(s) 9, 15, 16, 21, 22, 32 and 35 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

1. Claims 1-35 have been presented for reconsideration based on Applicant's amended claim language and Request for Continued Examination under 37 C.F.R. § 1.1114.

Response to Arguments

2. Applicant's arguments filed on 3-29-2004 have been fully considered. Examiners response is as follows.

2.1 Regarding the Applicants response to the 35 U.S.C. 103 rejections of Claims 1, 17, 23 and 33 under 35 U.S.C. 103:

Applicants have argued:

By present amendment, applicant has amended claim 1 to recite: "linking one of said models with another said models using said set of function calls; executing said virtual prototype, wherein said models communicate through a transaction based interconnect using said set of function calls and cycle accurate information is generated." It is respectfully submitted that neither Hollander nor Chan discloses, teaches or suggests that the models are linked and communicate through a transaction based interconnect using the set of function calls and cycle accurate information is generated.

The Examiner asserts that Applicant's arguments are persuasive in the prior art does not teach or suggest transaction based function calls. Applicant arguments have been persuasive and the Examiner withdraws the earlier 35 U.S.C. 103 rejections of Independent Claims 1, 17, 23 and 33.

Based on Applicant's amended claim language an updated search has revealed new art.

Art Unit: 2123

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

3. **Claims 1, 5, 6, 10, 17, 23, 24, 28, 29, 33 and 34** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Hollander U.S. Patent 6,182,258** in view **Dearth et al. U.S. Patent 5,881,267**.

3.1 As regards independent **Claims 1, 10, 17, 23 and 33** the *Hollander* reference discloses a simulation environment with more than one model (**Figures 1-8, Col. 2 Lines 50-67, Col. 3 Lines 1-3, Col. 4 Lines 58-65**), using a high-level programming language (**Col. 1 Lines 55-61, Col. 3 Lines 18-28, Col. 4 Lines 52-58, Col. 6 Lines 40-45, Col. 7 Lines 1-11**), where cycle accurate information is generated (**Figure 6 Item 86, Col. 3 Lines 18-28, Col. 10 Lines 24-28**).

However, the *Hollander* reference does not expressly disclose: *linking one of said models with another said models using said set of function calls; executing said virtual prototype, wherein said models communicate through a transaction based interconnect using said set of function calls. Hollander*, discloses that there is a need in the art for the reduction of verification time (**Hollander Col. 2 Lines 8-9**).

An ordinary artisan would have been motivated to search the system simulation art for a method of reducing the verification time of simulated systems, as suggested by the *Hollander* reference in order to overcome the express deficiencies of the reference in regards to the need for *linking one of said models with another said models using said set of function calls; executing said virtual prototype, wherein said models communicate through a transaction based interconnect using said set of function calls*. In the same art circuit simulation the *Dearth et al.* reference discloses a transaction based method of communicating between two models (**Dearth et al., Figure 3, Col. 6 Lines 34-52**) and using remote function calls, *which are functionally equivalent to calling standard function calls (Dearth et al., Col. 10 Lines 44-56)* as they relate to models of a circuit (**Dearth et al., Col. 2 Lines 10-14**).

Thus, it would have been obvious, to one of ordinary skill in the art, at the time of the invention was made, to have modified the simulation and verification models of the *Hollander* reference with the transaction based function calls of the *Dearth et al.* reference because, when a design is being verified the ability of the design engineers to efficiently customize the software for a particular simulation using the methods, as disclosed in the *Dearth et al.* reference (**Col. 2 Lines 30-52**), by breaking up the models and having a transaction based, clock cycle accurate method of resolving the way in which the models interact during simulation.

3.2 As regards dependent **Claims 5, 6 and 29** the *Hollander* reference discloses clock and signal functions (**Figures 4, 6, Col. 18 Lines 38-45**).

3.3 As regards dependent **Claims 24, 28 and 34** the *Hollander* reference discloses using a high level programming language (**Col. 1 Lines 55-61, Col. 3 Lines 18-28, Col. 4 Lines 52-58, Col. 6 Lines 40-45, Col. 7 Lines 1-11**).

4. **Claims 2-4, 7, 8, 11-14, 18-20, 25-27, 30 and 31** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Hollander U.S. Patent 6,182,258** in view of **Dearth et al. U.S. Patent 5,881,267** and in further view of **Malin et al U.S. Patent 5,732,192**.

4.1 As regards independent **Claims 1, 10, 17, 23 and 33** see paragraph **3.1** above.

4.2 As regards dependent **Claims 2-4, 7, 8, 11-14, 18-20, 25-27, 30 and 31** the *Hollander* reference does not expressly disclose a component management system.

The *Malin et al.* reference discloses a component management system for simulation (**Figures 1A-17**).

It would have been obvious to one of ordinary skill in the art, at the time of the invention, to have modified the *Hollander* reference with the *Malin et al.* reference because (*motivation to combine*) the *Malin et al.* reference discloses a flexible method of generating global models that provide ease of simulation without having to have specific information about the systems being modeled and abstracted (*Malin et al. Col. 2 Lines 43-51*).

Allowable Subject Matter

5. **Claims 9, 15, 16, 21, 22, 32 and 35** are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims and once all other rejections/objections have been traversed.

Conclusion

6. Claims 1-35 have been presented for reconsideration in view of the amended claim language and Applicant's Request for Continued Examination under 37 C.F.R. § 1.1114. Claims 1-8, 10-14, 17-20, 23-31, 33 and 34 are rejected. Claims 9, 15, 16, 21, 22, 32 and 35 are objected to.

6.1 This action is **NON-FINAL**.

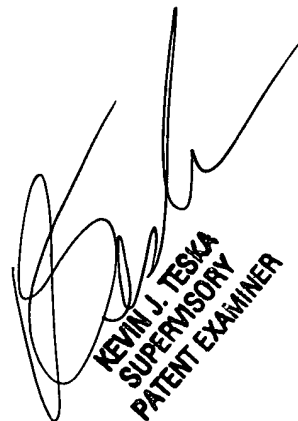
6.2 The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Dearth et al. U.S. **Patent 5,732,247** discloses detailed information about the function call disclosed in Dearth et al. U.S. **Patent 5,881,267 (Col. 10 Lines 65-67, Col. 11 Lines 1-17)**, *it is noted by the Examiner that U.S. Patent 5,732,247 is incorporated by reference into U.S. Patent 5,881,267.*

6.3 Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dwin M Craig whose telephone number is 703 305-7150. The examiner can normally be reached on 10:00 - 6:00 M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kevin Teska can be reached on 703 305-9704. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

DMC



KEVIN J. TESKA
SUPERVISORY
PATENT EXAMINER